

Surflan* 85 DF
62719-153

Final Printed Labeling

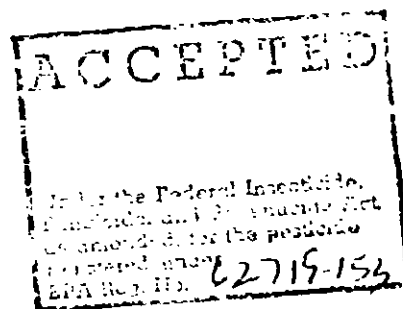
Note: This product is not currently being marketed. Therefore, corrections required as conditions of acceptance of WPS labeling have been made on inserts which will be incorporated into the product label prior to printing of any future labels and release for shipment.

Label text based on EPA-accepted copy dated April 25, 1990, and EPA-accepted WPS revisions dated December 10, 1993.

The following conditions of acceptance have been incorporated into attachments to be included into labels for this product when printed:

1. Added protective eyewear to list of PPE required by "applicators and other handlers" and to PPE required for early entry in the Agricultural Use Requirements box.
2. Added an Agricultural Use Requirements referral box to the container label which refers to the Agricultural Use Requirements box in the Directions for Use section. The exact text referred to on page 43 of Supplement Three was modified to read "label booklet" rather than "supplemental labeling" as this information appears in DowElanco's "label booklet" which can be removed from the product container.

*Trademark of DowElanco



Insert 1.

[Editor's note: Place boxed statement and referral statement to be placed on base label and front cover of label booklet.]

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to the label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

Refer to label booklet for additional precautionary information including Personal Protective Equipment (PPE) and User Safety Recommendations, and Directions for Use including Storage and Disposal.

Insert 2.

Precautionary Statements

Hazards to Humans and Domestic Animals

Keep Out of Reach of Children

CAUTION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)

Causes Eye Irritation • Harmful If Swallowed, Inhaled Or Absorbed Through The Skin

~~Avoid breathing spray mist and contact with skin, eyes or clothing. Mixer/loader/applicators must wear eye protection and protective clothing consisting of coverall, a long-sleeved shirt, shoes, and impermeable gloves when handling this product. Wash thoroughly with soap and water after handling.~~

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks
- Protective eyewear

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

First Aid

If in eyes: Flush with plenty of water. Get medical attention if irritation develops.

If swallowed: Do not induce vomiting. Call a physician or Poison Control Center. If available, administer activated charcoal (6-8 heaping teaspoonfuls) with a large quantity of water. Do not give anything by mouth to an unconscious person. Immediately transport to a medical care facility and see a physician.

If inhaled: Remove individual to fresh air. Get medical attention if breathing difficulty occurs. If not breathing, give artificial respiration, preferably cardiopulmonary resuscitation and get medical attention immediately.

If on skin: Wash with plenty of soap and water. Get medical attention if irritation develops.

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Environmental Hazards

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. Cover or incorporate spills.

Insert 3.

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Waterproof gloves
- Shoes plus socks
- Protective eyewear

DowElanco ID 5940

SURFLAN 85DF HERBICIDE

Net Contents XX Pounds

A selective preemergence surface-applied herbicide for control of annual grasses and many broadleaf weeds in:

- Landscape Ornamentals
- Container Grown Ornamentals
- Drainage Areas Under Greenhouse Benches
- Ornamental Bulbs
- Ground Covers
- Christmas Tree Plantations
- Noncropland
- Non-bearing Trees and Vines
- Industrial Sites
- Established Warm Season Turf (including Bahiagrass, Bermudagrass, Centipedegrass, St. Augustinegrass, Tall Fescue and Zoysiagrass)

Active ingredient: oryzalin (3,5-dinitro-N,N'-dipropylsulfanilamide) 85%
 Inert ingredients 15%

Contains 0.85 pounds of active ingredient per pound of product.

Surflan(P) - (oryzalin, DowElanco)

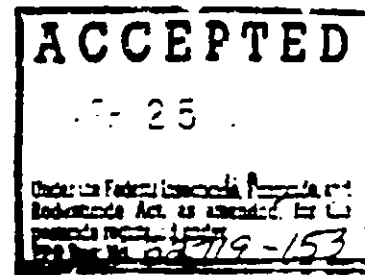
Keep Out of Reach of Children

CAUTION

Insert 1. See back panel for additional precautionary statements

EPA Reg. No. 62719-153
 EPA Est. No. XXXXX-00
 FN3053

DowElanco
 4040 Vincennes Circle, Suite 601
 Indianapolis, IN 46268, U.S.A.



ACCEPTED
 with COMMENTS
 In EPA Letter Dated

REC 10 1093
 Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 62719-153

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Insert 2

Precautionary Statements

Hazards to Humans and Domestic Animals

CAUTION

Causes eye irritation. Harmful if swallowed, inhaled or absorbed through the skin. Avoid breathing spray mist and contact with skin, eyes, or clothing. Mixer/loader applicators must wear eye protection and protective clothing consisting of coveralls, a long-sleeved shirt, shoes and impermeable gloves when handling this product. Wash thoroughly with soap and water after handling.

First Aid

If in eyes: Flush with plenty of water. Get medical attention if irritation develops.

If swallowed: Do not induce vomiting. Call a physician or Poison Control Center. If available, administer activated charcoal (6-8 heaping teaspoons) with a large quantity of water. Do not give anything by mouth to an unconscious person. Immediately transport to a medical care facility and see a physician.

If inhaled: Remove individual to fresh air. Get medical attention if breathing difficulty occurs. If not breathing, give artificial respiration, preferably cardiopulmonary resuscitation and get medical attention immediately.

If on skin: Wash with plenty of soap and water. Get medical attention if irritation develops.

Environmental Hazards

Do not apply directly to water or wetlands. Do not contaminate water when disposing of equipment washwaters. Cover or incorporate spills.

Directions for Use

Read All Directions Carefully Before Applying

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

See Attached literature for complete directions for use.

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STORAGE AND DISPOSAL

Storage. Store in original container only. In case of leak or spill, contain material with absorbent material and dispose as waste.

Pesticide Disposal. Do not contaminate water, food or feed by storage or disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal. Empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

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DowEanco ID 5940

**SURFLAN 85DF
HERBICIDE**

A selective preemergence surface-applied herbicide for control of annual grasses and many broadleaf weeds in:

- * Landscape Ornamentals
- * Christmas Tree Plantations
- * Established Warm Season Turf (including Bahiagrass, Bermudagrass, Centipedegrass, St. Augustinegrass, *a Rescue and Zoysiagrass)
- * Container Grown Ornamentals
- * Noncropland
- * Drainage Areas Under Greenhouse Benches
- * Non-bearing Trees and Vines
- * Ornamental Bulbs
- * Industrial Sites
- * Ground Covers

Active Ingredient: pryzalin (3,5-dinitro-N,N-dipropylsulfanilamide) 85%

Inert Ingredients 15%

Contains 0.85 pounds of active ingredient per pound of product.

Insert 1. —

Surflan® (pryzalin, DowEanco)

EPA Reg. No. 62719-153

EPA Est. No. X000X-00
FN3053

DowEanco
4040 Vincennes Circle, Suite 601
Indianapolis, IN 46258, U.S.A.

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- Dufflan(R) - (conyzalin, DowElanco)
- Spike(R) - (tebuthiuron, DowElanco)
- Blazon(R) - (miflufen Chemical)
- Castrol(R) (glyphosate), Phinios-Tuphar)
- Dowpon(R) - (dalapon, DowElanco)
- Fusilade(R) - (fluzifop-butyl, (C) Americas)
- Goal(R) - (oxyfluorfen, Rom and Haas)
- Bramoxone Super(R) - (paraquat, (C) Americas)
- Hyvar(R) - (bromachl, duPont)
- Karmex(R) - (diuron, duPont)
- Krovar(R) I & II - (bromachl plus diuron, duPont)
- Dust(R) - (sulfometuron methyl, duPont)
- Poast(R) - (sethoxydim, BASF)
- Princep(R) - (simazine, I ba-Gerby)
- Poundup(R) - (glyphosate, Monsanto)
- Sencon(R) - (metribuzin, Bayer)
- Telan(R) - (chlorsulfuron, duPont)

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Insert 2.

Precautionary Statements

Keep Out of Reach of Children

Hazards to Humans and Domestic Animals

CAUTION

Causes eye irritation. Harmful if swallowed, inhaled or absorbed through the skin. Avoid breathing spray mist and contact with skin, eyes, or clothing. Mixer/loader/applicators must wear eye protection and protective clothing consisting of coveralls, a long-sleeved shirt, shoes and impervious gloves when handling this product. Wash thoroughly with soap and water after handling.

First Aid

If in eyes: Flush with plenty of water. Get medical attention if irritation develops.

If swallowed: Do not induce vomiting. Call a physician or Poison Control Center. If available, administer activated charcoal (6-8 heaping teaspoonfuls) with a large quantity of water. Do not give anything by mouth to an unconscious person. Immediately transport to a medical care facility and see a physician.

If inhaled: Remove individual to fresh air. Get medical attention if breathing difficulty occurs. If not breathing, give artificial respiration preferably cardiopulmonary resuscitation and get medical attention immediately.

If on skin: Wash with plenty of soap and water. Get medical attention if irritation develops.

Insert 2. Continued

Insert 3.

Environmental Hazards	
Do not apply directly to water or wetlands. Do not contaminate water when disposing of equipment washwaters. Cover or incorporate spills.	
Directions for Use	
Read All Directions Carefully Before Applying	
It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.	

STORAGE AND DISPOSAL

Storage: Store in original container only. In case of leak or spill, contain material with absorbent material and dispose as waste.

Pesticide Disposal: Do not contaminate water, food or feed by storage or disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: Empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

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General Information

Surflan Dry Flowable is a pre-emergence surface applied herbicide for the control of annual grasses and many broadleaf weeds.

General Use Precautions

Surflan will not control established weeds.

Surflan is an orange chemical. If temporary orange coloration is undesirable, it may be altered by using a commercially available colorant such as Glazont(R).

Chemigation: Do not apply this product through any type of irrigation system.

Soil Preparation

Surflan will not control established weeds. Therefore, areas to be treated should be free of established weeds. Weed residues, prunings and trash should be thoroughly mixed into the soil or removed prior to treatment. The soil should be in good tilth and free of clods at the time of application.

Mixing Directions

Surflan Alone

Make sure spray tank is clean. Fill spray tank 1/4 full with clean water. Start agitation. Vigorous, continuous agitation throughout the spray tank is required with dry flowable formulations. Add the correct amount of Surflan Dry Flowable to the spray tank in a controlled manner to aid in mixing and dispersion and to prevent clogging of screens and outlet ports. Maintain continuous agitation from mixing through application.

Precaution: Do not allow the mixture to siphon back into the water source.

Surflan Tank-Mix Combinations

Vigorous continuous agitation is required for all Surflan tank mixes. Sparger pipe agitators generally provide the best agitation in spray tanks. To prevent foaming, keep the end of the fill pipe below the surface of the water in the spray tank during filling to prevent air from being stirred or splashed into the mixture.

Mixing Order:

Fill the tank 1/4 full with clean water, start agitation and add the correct amount of Surflan Dry Flowable as described above. Fill the spray tank to about 90% of final spray volume. Add other formulations in the order indicated below, allowing time for complete mixing and dispersion after addition of each product. Allow extra mixing and dispersion time for dry flowable products.

Add different formulation types in the following order: dry flowables (DF), wettable powders (WP), flowables (F), liquids (L) or aqueous suspensions (AS), solutions (S) and emulsifiable concentrates (EC).

Maintain continuous agitation during mixing, final filling and throughout application.

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spraying and agitation must be stopped before the spray tank is empty. The materials may settle to the bottom. Settled materials must be completely resuspended before spraying is continued. A sparger agitator is particularly useful for this purpose. Settled materials may be more difficult to resuspend than when originally mixed.

Premixing:

When tank mixing, initial mixing and dispersion of certain dry flowable or wettable powder products may be improved by premixing with water (slurrying). Where recommended, follow product label instructions for each material. Adding the slurred material to the spray tank through a 20 or 35 mesh wetting screen will help assure good initial dispersion. Fine screens in the tank should be no finer than 50 mesh (100 mesh is finer than 50 mesh).

Application

Ground Application:

Apply Surflan as a directed spray to the soil surface or as an overhead spray. Apply Surflan in sufficient spray volume to uniformly treat the area. Use only a properly calibrated, low-pressure herbicide sprayer that will apply the spray uniformly. Use herbicide tips and screens no finer than 50 mesh in nozzles and in-line strainers. As the amount of water used (spray volume) decreases, the importance of accurate calibration and uniform application increases. Check the sprayer daily to insure proper calibration and uniform application. Maintain continuous agitation from mixing through application. Avoid boom overlaps that will increase the application rate above that recommended.

Aerial Application:

Use a standard aerial herbicide boom sprayer. Aerial spray equipment should be calibrated to apply the proper amount of Surflan alone or in tank-mix combinations in 2 to 10 gallons of spray mixture per acre. Nozzle screens and in-line strainers should be no finer than 50 mesh for tank-mix combinations. Surflan (alone or in tank-mix combinations) mixes readily with water for concentrate aerial sprays; however, constant vigorous agitation that sweeps the contents from the bottom of the spray tank up into the main body of the liquid is required to maintain a uniform suspension until the spray tank is empty. Avoid overlap of spray patterns. Do not apply when wind conditions favor drift from the target area.

Activation and Cultivation

Surflan will remain stable on the soil surface up to 21 days. In absence of timely rainfall, irrigation can be used to move Surflan into the soil surface. A 1/2 inch rain or its equivalent in sprinkler irrigation is necessary to activate Surflan. If weeds begin to emerge due to lack of rainfall or irrigation, shallow cultivate 1 to 2 inches deep to destroy existing weeds and place Surflan in the weed germination zone. Shallow cultivation to a depth of 1 to 2 inches will not reduce herbicidal effectiveness. In containers, remove existing weeds by hand. If Surflan is not activated by rainfall, irrigation or cultivation within 21 days of application, erratic weed control may result.

Ornamental Plantings

Precautions:

Apply only to established plantings. Rooted liners should be established in containers two weeks prior to treatment or crop injury may occur.

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On container grown ornamentals where weed seed germination continues for extended periods of time, subsequent applications of Surflan should not be made any sooner than 90 days or crop injury may occur.

Do not apply Surflan in ornamental plantings where the likelihood of runoff into lawn areas containing dichondra or cool-season turfgrass species exists as severe injury or death may occur. Poor weed control may result if directions are not followed. Overapplication may result in crop injury or excessive soil residue.

For soils treated the previous season with Surflan, plant only the ornamental species listed on this label or injury may occur.

Do not apply to galdok corns less than 1 inch in diameter. It is recommended that Surflan be applied after emergence.

Ice Plant: When establishing unrooted Ice Plant on coarse soils in landscape plantings, use only the 2.4 pound per acre rate of Surflan Dry Flowable or crop injury may occur. After the Ice Plant is well established, a second application may be made.

Douglas Fir: Do not treat field grown plantings until the third season after transplanting.

Broadcast Application Rates

Length of Control	Surflan dSDF
Short Term Control (2-4 months)	2.4 lb/A (1 oz. per 1,200 sq. ft.)
Long Term Control (5-8 months)	4.7 lb/A (2 oz. per 1,200 sq. ft.)

Grasses Controlled by Surflan

Common Name	Scientific Name
Barley, little	<i>Hordeum pusillum</i>
Barnyardgrass (Watergrass)	<i>Echinochloa crus-galli</i>
Bluegrass, annual	<i>Poa annua</i>
Crabgrass (Large crabgrass) (Smooth crabgrass)	<i>Digitaria</i> spp.
Crowfootgrass	<i>Dactyloctenium aegyptium</i>
Cusgrass, southwestern	<i>Eriochloa gracilis</i>
Foxtails (Bottlegrass) (Bristlegrass) (Giant foxtail) (Green foxtail) (Pigeongrass) (Robust foxtail)	<i>Setaria</i> spp.

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(Yellow foxtail)	
Scousegrass	Elysiene indica
(Silver chadgrass)	
Johnsongrass	Tripsacum daniellense
(seedling only)	
Lung'lenice	Echinochloa polychroma
Lovegrass, Mexican	Enagrostis mexicana
Lovegrass, prairie	Enagrostis prairieana
Oat, wild	Avena fatua
Panicum, browntop	Panicum fasciculatum
Panicum, fall	Panicum dichotomiflorum
(Spreading panicgrass)	
Panicum, Texas	Panicum texanum
(Buffalograss)	
(Colonadgrass)	
Ryegrass, Italian	Lolium multiflorum
Sandbar, field	Cenchrus incertus
Signalgrass (Brachiaria)	Brachiaria spp.
Sprangletop, red	Leptochloa filiformis
Witchgrass	Panicum capillare

Broadleaf Weeds Controlled by Surflan

Common Name	Scientific Name
Bittercress	Cardamine spp.
Carpetweed	Mollugo verticillata
Chickweed, common	Stellaria media
Fiddleneck, coast	Amsinckia intermedia
Filaree, redstem	Erodium cicutarium
Filaree, whitestem	Erodium moschatum
Groundsel, common	Senecio vulgaris
Herbit	Lamium amplexicaule
Knotweed, prostrate	Polygonum aviculare
Lansquarters	Chenopodium album
Pigweeds	Amaranthus spp.
(Carelessweed)	
(Prostrate pigweed)	
(Redroot)	
(Rough pigweed)	
(Spring pigweed)	
(Tumble pigweed)	
Puncturevine	Tribulus terrestris
Purslane, common	Portulaca oleracea
Pusley, Florida	Richardia scabra
(Florida purslane)	
(Mexican clover)	
(Pusley)	
Rocket, London	Sisymbrium irio
Rockpurslane, desert	Calandrinia ciliata
Shepherdspurse	Capsella bursa-pastoris
Spurge, prostrate	Euphorbia humistrata
Woodsonia, yellow	Oxalis stricta

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Suppression of the following weeds may be erratic, ranging from poor to excellent depending upon soil temperature, time of germination, depth of seed in the soil, and amount and timing of soil moisture.

Common Name	Scientific Name
horseweed	<i>Conyza canadensis</i>
Ladysthumb	<i>Polygonum persicaria</i>
Lettuce, prickly	<i>Lactuca scariola</i>
Mallow, common	<i>Malva neglecta</i>
Milkweed, climbing	<i>Sarcostemma cynanchoides</i>
Morningglory	<i>Ipomoea spp.</i>
Mustard, black	<i>Brassica nigra</i>
Mustard, wild	<i>Brassica kaber</i>
Nightshade, black	<i>Solanum nigrum</i>
Ragweed, common	<i>Ambrosia artemisiifolia</i>
Smartweed	<i>Polygonum pennsylvanicum</i>
Sowthistle, annual	<i>Sonchus oleraceus</i>
Sponge, spotted	<i>Euphorbia maculata</i>
Tarweed (prickly sida)	<i>Sida spinosa</i>
velvetleaf	<i>Abutilon theophrasti</i>
wheat, volunteer	<i>Triticum spp.</i>

Surflan will not control established weeds.

Recommended Species Including Fruit Plant Nursery Liners

Surflan is recommended for use on all field grown established ornamental plants, trees and shrubs, established ground covers, field grown fruit tree and shrub nursery liners, and in the production of ornamental bulbs (See special directions on the use of Surflan Dry Flowable for ornamental bulb production).

ALL ORNAMENTALS ON THE FOLLOWING LIST MAY BE TREATED WHEN FIELD GROWN WHERE INDICATED LISTED SPECIES MAY ALSO BE TREATED WHEN CONTAINER GROWN.

Common Name	Scientific Name	Recommended Treatment Method: C = Container Grown, F = Field Grown (F/C)
Abelia, Glossy	<i>Abelia grandiflora</i>	F
Acacia, Prostrate	<i>Acacia redolens</i>	F
Agave	<i>Agave macrocarpis</i>	F
Andromeda	<i>Pieris japonica</i>	F, C
Apple	<i>Malus spp.</i>	F
Arborvitae, American	<i>Thuja occidentalis</i>	F, C
Arborvitae, Oriental	<i>Platycladus orientalis</i>	F, C
Ash	<i>Fraxinus spp.</i>	F
Astilbe/False Spirea	<i>Astilbe chinensis</i> and <i>A. chin.</i>	F, C
Azalea	<i>Rhododendron spp.</i>	F
Barberry, Japanese	<i>Berberis thunbergii</i>	F, C
Bellflower	<i>Campanula elatines</i>	F, C

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Bird of Paradise	Coronella reginae	F
Blazing Star	Latris spicata	F, C
Bleeding Heart	Diervilla spectabilis	F, C
Bottlebrush, Lemon	Callistemon citrinus	F, C
Boxwood, Common	Buxus sempervirens	F, C
Boxwood, Japanese	Buxus microdonyala japonica	F
Brush Cherry	Syzygium paniculata	F, C
California Laurel	Umbellularia californica	F
Cape Marigold	Dinorhynchaea spp	F
Cassia, Feathered	Cassia antemissoides	F
Cherry, Mahaleb	Prunus mahaleb	F
Cherry, Sweet	Prunus avium	F
Chrysanthemum, Florists	Chrysanthemum morifolium	F
Cleyera, Japanese	Cleyera japonica	F, C
Cotoneaster	Cotoneaster spp	F, C
Coyotebush, Dwarf	Baccharis pilularis	F
Crape Myrtle, Common	Lagerstroemia indica	F, C
Crataegoma, Japanese	Crataegoma japonica	F, C
Cypress, Arizona	Cupressus arizonica (g. abn.)	F, C
Cypress, Italian	Cupressus sempervirens	F, C
Daisy, Painted	Chrysanthemum coccineum	F
Daisy, Trailing African	Osteospermum fruticosum	F
Daylily	hemerocallis spp	F
Dogwood, Flowering	Cornus florida	F
Eastercactus	Rhipsalidopsis gaentheri	F, C
Escallonia	Escallonia exoniensis	F, C
Eucalyptus	Eucalyptus spp	F
Euonymus	Euonymus spp	F, C
Falsedryess, Lawson	Chamaecyparis lawsoniana	F
Fatsyhedera	Fatsyhedera lizei	F, C
Fir	Abies spp.	F
Douglas Fir	Pseudotsuga menziesii	F
(See precautions for ornamental species)		
Firethorn	Pyracantha spp	F, C
Forsythia, Border	Forsythia intermedia	F
Gardenia	Gardenia jasminoides	F, C
Gazania, Trailing	Gazania rigens leucolaena	F
Geranium (Pelargonium)	Pelargonium hortorum	F
Ginkgo	Ginkgo biloba	F, C
Garden Gladiolus	Gladiolus hortulanus	F
Goldenrain Tree	Koelreuteria paniculata	F
Heavenly bamboo (Nandina)	Nandina domestica	F
Hibiscus, Chinese	Hibiscus rosa-sinensis	F
Holly, Chinese	Ilex cornuta	F, C
Holly, English	Ilex equifolium	F
Holly, Japanese	Ilex crenata	F
Honeysuckle, Japanese	Lonicera japonica	F
Honeysuckle, Mexican	Justicia spicigera	F
Hooseebush, Clammy	Codonaea viscosa	F
Ice Plant, Largeleaf	Carpobrotus edulis	F
(See precautions for ornamental plantings)		
Ice Plant	Mesembryanthemum crystallinum	F
(See precautions for ornamental plantings)		
Impatiens (Busy Lizzie)	Impatiens wallerana	F

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Tree Bearded	<i>Junis</i> spp.	F
Tree Algerian	<i>Hedera canariensis</i>	F
Tree English	<i>Hedera helix</i>	F
Tenneytea Redroot	<i>Geanotus americanus</i>	F
Thorned	<i>Juniperus</i> spp.	F
Tree Mountain	<i>Kalmia latifolia</i>	F
Tree Cherry, Carolina	<i>Prunus caroliniana</i>	F
Tree Cherry, English	<i>Prunus laurocerasus</i>	F
Leucothoe, Coast	<i>Leucothoe axillaris</i>	F
Leucothoe, Drooping	<i>Leucothoe fontanesiana</i>	F
Urtica, Common	<i>Syringa vulgaris</i>	F
Urtica, Plantain	<i>Hosta</i> spp.	F
Urtica, Bigblue	<i>Liriodie muscari</i>	F
Urtica-of-the-Mile	<i>Agapanthus africanus</i>	F
Magnolia, Southern	<i>Magnolia grandiflora</i>	F
Manzanita, Stanford	<i>Arctostaphylos stanfordiana</i>	F
Maple	<i>Acer</i> spp.	F
Margold	<i>Tagetes</i> spp.	F
Mockorange	<i>Philadelphus</i> spp.	F
Moss, Rose	<i>Portulaca grandiflora</i>	F
Myodorum, Prostrate	<i>Myodorum parvifolium</i>	F
Myrtle, True	<i>Myrtus communis</i>	F
Oak	<i>Quercus</i> spp.	F
Oleander	<i>Nerium oleander</i>	F
Oregon Grape	<i>Mahonia aquifolium</i>	F
Osmanthus, Holly-leaf	<i>Osmanthus heterophyllus</i>	F
Palo Verde, Blue	<i>Cercidium floridum</i>	F
Pansy	<i>Viola wittrockiana</i>	F
Pear	<i>Pyrus communis</i>	F
Penstemon, Bigleaf	<i>Viola major</i>	F
Penstemon, Dwarf	<i>Viola minor</i>	F
Petunia	<i>Petunia</i> spp.	F
Photinia	<i>Photinia fraseri</i>	F
Pine	<i>Pinus</i> spp.	F
Pittosporum	<i>Pittosporum</i> spp.	F
Privet	<i>Ligustrum</i> spp.	F
Redcedar, Eastern	<i>Juniperus virginiana</i>	F
Red Cedar, Western	<i>Thuja plicata</i>	F
Redwood, Coast	<i>Sequoia sempervirens</i>	F
Rhaphtolepis, India	<i>Rhaphtolepis indica</i>	F
Rhododendron	<i>Rhododendron</i> spp.	F
Rose	<i>Rosa</i> spp.	F
Rose-of-Sharon (Shrubalthea)	<i>Hibiscus syriacus</i>	F
Sage	<i>Salvia</i> spp.	F
Shrimp Plant	<i>Justicia brandegeana</i>	F
Snodragon	<i>Antirrhinum majus</i>	F
Sotol, Desert Spoon	<i>Casylinton wheeleri</i>	F
Spruce	<i>Picea</i> spp.	F
Star Jasmine, Chinese	<i>Trachelospermum jasminoides</i>	F
Stonecrop	<i>Sedum brevifolium</i>	F
Sunac, African	<i>Rhus lancea</i>	F
Sweetgum, American	<i>Liquidambar styraciflua</i>	F
Truncet Vine, Violet	<i>Clytostoma callistegioides</i>	F
Viburnum Laurustinus	<i>Viburnum tinus</i>	F

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Yucca, Bandana	Yucca, suspensa	0
Yucca, Didiashined	Yucca, Florida	0
Yucca, Redbeard	Eucalyptus, fortune	0.1
Yucca, Japanese	Eucalyptus, congesta	0
Yucca	Achillea, spp.	0
Yucca	Alex, vomitoria	0.1
Yucca, Japanese	Taxus, media	0
Yucca	Taxus, cuspidata	0
Yucca	Podocarpus, macrophyllus	0.1
Yucca, Pendulous	Yucca, recurvifolia	0
Yucca, Soapstone	Yucca, elata	0.1
Zinnia, Common	Zinnia, elegans	0

Field Grown Fruit Plant Nursery Liners

Surflan is recommended for the following species

Almond	Grapefruit	Pear
Apple	Kumquat	Pecan
Apricot	Lemon	Pistachio
Avocado	Macadamia Nut	Plum
Cherry	Nectarine	Pomegranate
Fig	Olive	Prune
Hibiscus	Orange	walnut, English
Grape		

Small Fruits

Blackberry	Currant	Gooseberry
Blueberry	Dewberry	Loganberry
Boysenberry	Raspberry	Raspberry

Tank-Mix Combinations

Tank-mix combinations of Surflan plus Roundup(R), Fusilade(R), Goal(R) and Poast(R) are recommended to control undesirable vegetation in ornamental areas. Applied as directed, these Surflan tank-mixes will provide control of susceptible species listed on the respective labels. Read the product labels for directions, precautions and limitations prior to use.

Surflan/Roundup Tank-Mix

Tank-mix combinations of Surflan/Roundup are recommended to control existing undesirable vegetation. Applied as directed, Surflan plus Roundup will provide control of susceptible species listed on the respective labels of the two herbicides.

Precaution:

Roundup is not recommended as an over-the-top spray in ornamentals. Extreme care must be exercised to prevent contact of Roundup-containing sprays with foliage of desirable turfgrasses, trees, shrubs, or other desirable vegetation since severe damage or destruction may result.

Note: If spraying with Roundup in areas adjacent to desirable plants, use a shield made of cardboard, sheet metal, or plywood to help prevent spray from contacting foliage of desirable plants.

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Ornamental Bulbs

Precaution: In the spring, do not apply to bulb plants that have emerged to a height greater than 3.4 inch. Deep plow prior to planting any bulb later in its use.

Directions for Use

Surflan may be applied for control of susceptible annual weeds in ornamental bulbs e.g. tulips, iris, daffodil, narcissus, hyacinth and lily.

Apply Surflan to the soil surface in the fall 2 to 4 weeks after planting and final tilling, but prior to the emergence of annual weeds.

Apply Surflan again in late winter or early spring to weed-free soil surfaces.

Broadcast Application Rates

Soil Texture	Time of Application	Surflan 95 DF Flowable emul.	
		Amount per Acre	Amount per 1,000 sq. ft.
Coarse	Fall	0.9 pound	3.3 ounce
Medium & Fine	Fall	1.3 pounds	3.4 ounce
All	Feb-March	0.9 pound	3.3 ounce

Christmas Tree Plantations

Surflan Alone

Apply Surflan as a directed spray to the soil surface or as an overhead spray to established plantings of field grown Christmas tree species. Follow all instructions provided in the "Directions for General Use" section of this label. Surflan does not control established weeds.

Broadcast Application Rates:

Time of Control	Surflan 95 DF Pounds Per Acre
Short term control (2-4 months)	2.4
Long term control (5-8 months)	4.7

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Tank-Mix Combinations

Surflan/Princep(R) or Goal(R):

Tank mix combinations of Surflan and Princep 30W or Goal are recommended as directed or over-top sprays in Christmas tree plantings. When applied according to use directions these tank-mixes will provide control of susceptible weed species listed on the respective product labels. Refer to tank-mix product labels for additional use directions, precautions and limitations prior to use.

Surflan Roundup:

Tank-mix combinations of Surflan plus Roundup are recommended as directed sprays in Christmas tree plantings. When applied according to use directions Surflan plus Roundup will provide control of susceptible weed species listed on the respective product labels.

Broadcast Application Rates:

Surflan DF	Roundup	
Rounds Per Acre	Existing Annual and Broadleaf weeds	Quarts Per Acre
2-4-4-7	Less than 6 inches tall	1
2-4-4-7	More than 6 inches tall	1 1/2
2-4-4-7	Existing perennial weeds	2-5

Precaution:

Roundup is not recommended as an over-the-top spray in Christmas tree plantings. Extreme care must be exercised to avoid contact of spray containing Roundup with foliage of Christmas trees or severe damage or death may result.

Noncropland Areas and Industrial Sites

Noncropland Areas - Tank-Mix Combinations

Tank-mix combinations of Surflan plus Roundup, Fusilade(R), Goal and Poast(R) are recommended to control undesirable vegetation in noncropland areas. Applied as directed these Surflan tank-mixes will provide control of susceptible species listed on the respective product labels. Refer to tank-mix product labels for additional use directions, precautions and limitations prior to use.

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Broadcast Application Rates

Surflan Dry Flowable*

Nonresidential Areas

Roundup

Quints Per 1,000 sq. ft.	Pounds Per Acre	Existing Annual and Broadleaf weeds	Fluid Quints Per 1,000 sq. ft.	Quints Per Acre
1-3	2.4 - 7.1	Less Than 5" Tall	0-9	1
1-3	2.4 - 7.1	More Than 5" Tall	1-3	1-2
1-3	2.4 - 7.1	Existing Perennial Weeds	1-3-4-5	2-5

*Length of weed control period will vary with the rate applied. Usually 2.4 pounds per acre will provide 2 to 4 months control, 4.7 pounds 6 to 9 months control and 7.1 pounds 9 to 12 months control.

Industrial Sites - Tank-Mix Combinations

Tank-mix combinations of Surflan plus Spike (R), Casoron(R), Dowpon(R), Hyvar(R) X, Karmex(R) (duron), Krovar(R) I & II, MSMA, Oust(R), Gramoxone Super(R), Roundup 2.4-D, Princep (simazine), Sencor(R), and Telar(R), are recommended as overtop sprays to control existing vegetation on industrial areas including utility substations, highway guard rails, sign posts and detectors. Applied as directed, these Surflan tank-mixes will provide control of susceptible species listed on the respective product labels. Read the product labels for directions, precautions and limitation prior to use.

Warm Season Turfgrasses

General Information

Surflan may be applied as a preemergence treatment for control of annual grasses and certain broadleaf weeds in established warm season turf including bahiagrass, bermudagrass, centipede-grass, established tall fescue, St. Augustinegrass and zoysiagrass. Surflan works by controlling weeds as they germinate.

Surflan can be applied to ornamental trees and shrubs adjacent to turf areas. Refer to the "Ornamental Plantings" section of the label for use instructions.

Successful preemergence control of annual grass weeds listed on this label requires proper timing of application. Apply Surflan prior to the germination of annual grass weeds. As summer annual grasses do not germinate at the same time, if application timing does not coincide with the normal germination period of any of the annual grass weeds listed on this label, weed control results may be erratic or poor. In the absence of timely rainfall irrigation can be used to move Surflan into the soil surface.

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Precautions:

Surflan will not control established weeds

Surflan may injure turf that is not well established or is in a weakened condition due to winter climate or drought conditions. Apply Surflan only to healthy, well established turf.

Use Surflan only as a part of a total turf management program that includes good fertilization practices.

Do not apply Surflan in the spring or summer to tall fescue turfgrass reseeded the previous fall. In bermudagrass areas that have been overseeded with winter grasses, a spring application of Surflan will thin the overseeded grasses.

Do not apply Surflan to newly sponged areas of bermudagrass, St. Augustinegrass, centipede grass or zoysiagrass until these turfs are well established.

Do not apply Surflan to newly hydromulched areas of bermudagrass until these areas are well established.

DO NOT APPLY Surflan to golf course putting greens.

Any cultural practices that disturb the soil, such as aeration or verticutting, should be done prior to application of Surflan.

Areas planted to bermudagrass var. "Sun Turf" in Northeastern Oklahoma have shown sensitivity to Surflan that has been tank-mixed with atrazine.

Annual Grass Weeds in Turf Controlled by Surflan

Summer Annuals:

Common Name	Scientific Name
Barnyardgrass (Watergrass)	Echinochloa crus-galli
Crabgrass (Large crabgrass) (Smooth crabgrass)	Digitaria spp.
Clawfootgrass	Dactyloctenium aegyptium
Foxtails (Bottlegrass) (Bristlegrass) (Giant foxtail) (Green foxtail) (Pigeongrass) (Robust foxtail) (Yellow foxtail)	Setaria spp.
Goosegrass (Silver crabgrass)	Elyusine indica
Johnsongrass (Seedling only)	Sorghum halepense
Ryegrass (Italian)	Lolium multiflorum
Sandspur (field)	Cenchrus incertus

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Winter Annuals

Common Name	Scientific Name
.....
Barnyard grass	Poa annua

Annual Broadleaf Weeds Controlled by Surflan

Summer Annuals:

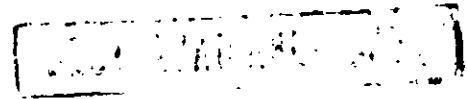
Common Name	Scientific Name
.....
Carpetweed	Mollisga verticillata
Knotweed, prostrate	Polygonum aviculare
Purslane, common	Portulaca oleracea

Winter Annuals:

Common Name	Scientific Name
.....
Chickweed, common	Stellaria media
Henbit	Lamium am. carduale

Broadleaf Weeds Partially Controlled by Surflan

Common Name	Scientific Name
.....
Groundsel, common	Senecio vulgaris
Sourcel, prostrate	Euphorbia humistrata
Woodsorrel, yellow	Oxalis stricta



Surflan does not control established weeds

Application Rates, Frequency and Timing of Application

Surflan can be applied in the spring for summer annual grass and broadleaf weed control and in the fall for Poa annua and winter annual broadleaf weed control.

1. Spring Germinating Summer Annual Grasses and Broadleaf Weeds

A. Single Application Program

For preemergence control, apply 2.4 to 3.6 pounds Surflan Dry Flowable per acre in late winter or early spring prior to onset of conditions favorable for annual weed germination. Apply the 3.6 pound rate in areas with a longer growing season or where control of weeds is required for a longer period of time

B. Split Application Program

As an alternative to a single application program, Surflan Dry Flowable may be applied in a split application. This program is desirable when the initial application is made well in advance of weed germination and where weed control is desired for a longer period of time. Apply 1.8 pounds per acre of Surflan DF in an initial application, followed by a second application of 1.8 pounds per acre 8 to 10 weeks later

The split application program is recommended where established tall fescue is the dominant turfgrass species

2. Annual Bluegrass (Poa annua) and Broadleaf Winter Annuals

In areas of heavy annual bluegrass infestation, its elimination will result in temporary thinning of turfgrass cover. Proper fertilization, irrigation and soil incorporated reseeding should be employed to speed the restoration of desirable turfgrasses cover in areas previously occupied by annual bluegrass (See section on reseeding)

Apply Surflan Dry Flowable as a preemergence treatment in late summer or early fall prior to the expected germination period for annual bluegrass and winter annual broadleaf weeds. If annual bluegrass infestation is severe and its elimination will result in thinning of turfgrass cover, apply Surflan DF at 1.8 pounds per acre. If thinning of turfgrass cover is not a potential problem, Surflan DF may be applied at 1.8 to 3.6 pounds per acre depending on the degree of expected winter annual weed infestation and length of control desired. For treatment of small areas, use the application rates expressed in ounces per 1,200 sq. ft. which correspond to the desired broadcast application rate indicated in the following table.

Application Rates for Poa annua and Winter Annual Weed Control

Surflan Dry Flowable	
(Pounds per Acre)	(Ounces per 1,200 sq. ft.)
1.8	3/4
2.4	1
3.6	1.5

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Application Equipment

Apply Surflan evenly over the turfgrass area and avoid skips, misses and overlaps. For best results use equipment designed to broadcast apply liquid herbicides or insecticides. Calibrate application equipment prior to use, according to manufacturer's directions. Check equipment frequently to make sure it is working properly and spraying uniformly.

Reseeding

Herbicides that control annual weeds may also affect establishment of desirable turfgrass seedlings. Reseeding should be delayed for at least 90-120 days following application of Surflan. When reseeding, it is essential that proper cultural practices such as soil cultivation and seedbed preparation, irrigation and fertilization be followed. For satisfactory reseeding results following Surflan use, the seeding rate should be increased and equipment designed to place seed in full contact with soil (such as the Ronars Aero Seeder) should be employed.

DISCLAIMER OF WARRANTIES

DowElanco makes no warranties concerning this product or its use, which extend beyond the description on the label. DowElanco also expressly disclaims all warranties express or implied, in relation to any use of this product in combination or sequential use with any other product not specifically recommended in writing by DowElanco. All other warranties, express or implied, including but not limited to, any implied warranties of merchantability and fitness for a particular purpose, are disclaimed. All statements concerning this product apply only when used as directed. This disclaimer of warranties does not apply where prohibited by operation of law.

LIMITATION OF DAMAGES

The liability of DowElanco, whether in contract, warranty, tort, negligence, strict liability or otherwise, shall not exceed the return of the amount of the purchase price of this product and under no circumstances shall DowElanco be liable for special, indirect or consequential damages. If Surflan Dry Flowable is used in a combination or sequential use recommended by DowElanco, the liability of DowElanco shall in no manner extend to any damage, loss or injury not directly caused by the inclusion of Surflan Dry Flowable in such combination or sequential use. This limitation of damages does not apply where prohibited by operation of law.

rsb

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